

Notice of Allowability

Application No.

09/602,474

Examiner

Zhuo H Li

Applicant(s)

HERBST, JOSEPH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/30/2004.
2. ☒ The allowed claim(s) is/are 1-4 and 6-20.
3. ☒ The drawings filed on 28 January 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____



EXAMINER'S AMENDMENT AND STATEMENT OF REASONS FOR ALLOWANCE

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Majid S. Albassam (Registration No. 54,749) on February 18, 2005.

The application has been amended as follows:

Claim 3 A method for managing memory in a network switch, said method comprising the steps of:

receiving a request from a module for a next available memory address in a first clock cycle, comprising providing an address pointer for indicating the next available memory address in a memory address pool, wherein the address pointer releases and address in a last-in first-out operation;

receiving a released memory address in the first clock cycle; and
passing off the released memory address to the module requesting the next available memory address in place of the next available memory addresses in a second clock cycle, which is a next clock cycle after the first clock cycle.

Claim 6. A method for managing memory, said method comprising the steps of:

providing a memory having a predetermined number of memory storage locations therein;

providing a predetermined number of address in a stack, each of the predetermined number of addresses corresponding to a unique memory storage location; and

providing an address pointer for indicating a next available address to be used from the predetermined number of addresses in the stack, wherein the address pointer releases and address in a last-in first-out type operation;

wherein the method further comprises a step of passing off an address released back to the stack to a request for an available address in place of a next available memory address when a release of an address back to the stack occurs in the same clock cycle as the request for an available address.

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

2. Claims 1-4 and 6-20 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Applicant's invention is draw to a method and apparatus for managing memory in a network switch by using a memory address pool in order to efficiently eliminates the clock cycles associated with the aforementioned unnecessary accesses to memory, increases the performance of the memory, and reduces the overhead necessary to efficiently operate the memory (i.e., a memory address pool having a plurality of available memory address and a

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memory address pointer indicates a next available memory address in the memory address pool by using a last-in first-out operation, pass off an available memory address in place of next available memory address when a request to read an address is received during the same clock cycle as a request to write an address).

Applicant's independent claims 8, 13 and 20 each recites, *inter alia*, a memory address pool (87) with a structure defined in specification (pages 78-85 and 87-93) comprising a plurality of memory address, each of plurality of memory address corresponding to an individual memory location in a memory and a memory controller (88) manages an address pointer for indicating a next available memory address in the memory address pool and is configured to pass off the released memory address in place of the available memory address upon a request for the available memory address in the same clock cycle. Applicant's invention of claims 8, 13 and 20 comprises a particular combination of elements, which is neither taught nor suggested by the prior art.

Applicant's independent method claims 1, 3 and 6 each recites, *inter alia*, the steps of providing a memory address pool having a plurality of available memory addresses arranged therein, wherein each of the plurality of memory addresses corresponds to a specific memory location, and providing a memory address pointer, wherein the memory address pointer indicates a next available memory address in the memory address pool, wherein the address pointer releases an address in a last-in first-out operation, and passing off an address released back to the memory address to a request for an available address in place of next available memory address when a release of an address back to the memory address occurs in the same clock cycle as the

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request for an available address. These steps, in combination with the remaining steps of claims 4 and 7, are neither taught nor suggested by the prior art.

Accordingly, applicant's claims are allowed for these reasons and for the reasons recited by the applicant's amendment filed on 1/28/2004 and 5/11/2004, and response filed on 11/30/2004.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhuo H Li whose telephone number is 571-272-4183. The examiner can normally be reached on M-F 9:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zhuo H. Li



Patent Examiner
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MATTHEW ANDERSON
PRIMARY EXAMINER
GROUP 2/00